PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Akira MATSUZAWA, et al.

Docket No: Q79291

Appln. No.: 10/754,712

Group Art Unit: 1765

Confirmation No.: 1364

Examiner: Shamim Ahmed

Filed: January 12, 2004

For: INK-JET RECORDING HEAD, MANUFACTURING METHOD OF THE SAME AND INK-JET RECORDING APPARATUS

DECLARATION UNDER 37 C.F.R. §1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Masato SHIMADA, hereby declare and state:

THAT I am a citizen of Japan;

THAT I graduated with a master's degree from Department of Applied Physics, Graduate School of Engineering, Nagoya University;

THAT since April 1985, I have been employed by SEIKO EPSON CORPORATION, the assignee of the above application. Since April 1994, I have been engaged in the development and manufacture of an ink-jet recording head comprising a piezoelectric element;

THAT I am a co-inventor of the invention described and claimed in the above-identified application; and

THAT I am a co-inventor of the invention described and claimed in the reference cited in the Office Action (EP 963 846).

REMARKS

This rejection should be withdrawn because Shimada et al.(EP 963 846) does not disclose or render obvious the manufacturing method for an ink-jet recording head of the present invention.

The present invention is different from the disclosure of Shimada et al. '846 in that the method of the present invention includes the "step of imparting etching selectivity".

The Examiner has stated that the structure including the elastic film and the elastic film removal part formed therein, as shown in figure 12 of Shimada et al., clearly shows the etching selectivity imparted to the elastic film. This elastic film removal part, however, can be easily formed by controlling the etching time of the elastic film, and also, Shimada et al. provides no disclosure suggesting the step of imparting the etching selectivity to the elastic film.

Additionally, in the present invention where the etching selectivity is imparted to the passage-forming layer in order to form a space, the width of the space is substantially uniform in the thickness direction of the passage-forming layer. As apparent from Figure 12 of Shimada et al., the width of the elastic removal part 350, however, is greater when it gets closer to the passage-forming substrate 10. This evidences clear support that the elastic film removal part 350 of Shimada et al. must be formed by controlling the etching time for etching the elastic film 50 from the pressure generating chamber side(see pressure generating chamber 12).

Accordingly, the manufacturing method of the present invention is different from the manufacturing method disclosed in Shimada et al., and is not obvious from the disclosure of Shimada et al.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: May 22, 2006

BY Masato Shimada

Masato SHIMADA